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**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**50 CFR Part 17**

**Endangered and Threatened Wildlife  
and Plants; Proposed Endangered  
Status for *Polystichum aleuticum***

**AGENCY:** Fish and Wildlife Service,  
Interior.

**ACTION:** Proposed rule.

**SUMMARY:** The Fish and Wildlife Service (Service) proposes to list *Polystichum aleuticum* (Aleutian shield-fern), a perennial known from only two locations in the Aleutian Islands, Alaska, as an endangered species under the authority of the Endangered Species Act (Act) of 1973, as amended. This species is endangered due to its extreme rarity, collecting for scientific and educational purposes, the threat of grazing and trampling by introduced ungulates, and loss of habitat from wind erosion and soil movement. This proposed rule, if made final, will provide protection and recovery provisions afforded by the Act to *Polystichum aleuticum*. The Service seeks data and comments from the public on this proposal.

**DATES:** Comments from all interested parties must be received by June 23, 1987. Public hearing requests must be received by June 8, 1987.

**ADDRESSES:** Comments and materials concerning this proposal should be sent to the Endangered Species Division Chief, U.S. Fish and Wildlife Service, 1011 East Tudor Road, Anchorage, Alaska 99503. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

**FOR FURTHER INFORMATION CONTACT:** Mr. Michael Amaral (see ADDRESSES section) at 907/786-3435 or FTS 786-3435).

**SUPPLEMENTARY INFORMATION:**

**Background**

*Polystichum aleuticum* (family Polypodiaceae) is a small, tufted fern, about 150 millimeters (6 inches) tall, and arises from a stout, dark brown rhizome with brown scales and numerous chestnut-brown remains of frond bases (Murray 1980). The small, simply-pinnate fronds (leaves) with spiny-toothed pinnae (segments) and distinctive chestnut-brown stipe bases readily distinguish *P. aleuticum* from all other ferns in the Aleutian Islands (Lipkin 1985).

Until recently, *P. aleuticum* was known only from the original collection made by Eyerdam in 1932, who reported its location as Atka Island in the Aleutians (Hulten 1936). Based on Eyerdam's collections, Christensen published a description of the species in 1938. In 1975, D.K. Smith discovered a second population of 15 plants on Mt. Reed, Adak Island, about 160 km (100 miles) west of Atka.

This species is known only from these two locations in the Andreanof Island group of the Aleutian Islands, Alaska. It is a very well-marked and extremely narrow endemic without close relatives in North America or northern Asia (Wagner 1979). Its presence in only the Andreanof Island group which formed a single, large island during maximum glaciation, suggests it may be a relict species that survived on a nunatak or refugium (Lipkin 1985). It apparently has not expanded its range. Smith (1985) describes *P. aleuticum* as among the most restricted and rarest ferns of North America.

On Adak Island, *P. aleuticum* was found in a north-facing rock outcrop below the summit of the 590 meter (1,936 foot) Mt. Reed. The site consists of treeless, alpine talus slopes that are vegetated with low-growing herbs and prostrate shrubs. No information is available on the location or the status of the Atka population collected by Eyerdam in 1932 other than his annotation, "very rare" (Lipkin 1985). Efforts by Friedman (1964) and Lipkin (1985) to relocate the Atka population were unsuccessful. Despite intensive searching by R. Lipkin and S. Taffot (1986), no plants were seen on Adak in 1984 and 1985, respectively. However, both authors encountered difficult survey conditions and reported that the site was probably overlooked. The habitat remains, and the populations are

assumed to be extant. Grazing by introduced caribou, depletion by collecting, and habitat instability are possible reasons for its apparent rarity.

Federal Government actions on this species began with Section 12 of the Endangered Species Act of 1973 (Act), which directed the Secretary of the Smithsonian Institution to prepare a report on those plants considered to be endangered, threatened, or extinct. This report, designated as House Document No. 94-51, was presented to Congress on January 9, 1975. On July 1, 1975, the Service published a notice in the *Federal Register* (40 FR 27823) of its acceptance of the Smithsonian Institution report as a petition within the context of section 4(c)(2) of the Act (petition acceptance is now governed by section 4(b)(3)(A) of the Act), and of its intention thereby to review the status of the plant taxa named therein. On June 16, 1976, the Service published a proposed rule in the *Federal Register* (41 FR 24523) to determine approximately 1,700 vascular plant species to be endangered species pursuant to section 4 of the Act. The list of 1,700 plant taxa was assembled on the basis of comments and data received by the Smithsonian Institution and the Service in response to House Document No. 94-51 and the July 1, 1975, *Federal Register* publication.

*Polystichum aleuticum* was included in the Smithsonian petition and the June 16, 1976, proposal. General comments received in relation to the 1976 proposal were summarized in the *Federal Register* on April 26, 1978 (43 FR 17909).

The Endangered Species Act Amendments of 1978 required that all proposals over 2 years old be withdrawn. On December 10, 1978, the Service published a notice (44 FR 70796) withdrawing the June 16, 1976, proposal along with four other proposals that had expired. On December 15, 1980, the Service published a revised notice of review for native plants in the *Federal Register* (45 FR 82486); *Polystichum aleuticum* was included in that notice and in the Service's updated plant notice of September 27, 1985 (50 FR 39526).

**Summary of Factors Affecting the Species**

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR Part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal Lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their

application to *Polystichum aleuticum* C. Chr. (Aleutian shield-fern) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* The Mt. Reed site on Adak Island lies within the Adak Naval Air Station and the Alaska Maritime National Wildlife Refuge (NWR). No present or anticipated development is likely to alter this site or similar alpine habitats on Adak Island. Mt. Reed is accessible to hunters and hikers, but the current level of use apparently does not pose a threat (Lipkin 1985). Atka Island is partially in private ownership (Atkam Native Corporation) and partially public land administered by the Service as a NWR. Proper protection and management plans are needed for all sites containing populations of the fern so that it is not inadvertently disturbed or destroyed.

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* Taking for commercial or recreational purposes has not been a documented factor in the decline of this species. However, taking for scientific and educational purposes has reduced the population, and, given its extreme rarity, overcollecting could pose a further threat in the future.

C. *Disease or predation.* Caribou were introduced to Adak Island in 1958, and 250-400 animals now occur on the island. Caribou are present in the Mt. Reed (Adak) location and may have impacted *P. aleuticum* by grazing and trampling. C.F. Zeilemaker, Refuge Manager on Adak, reports that reindeer, introduced to Atka Island in 1914, have overgrazed the west end of that island. The exact location of the *Polystichum* on Atka has not been confirmed, however, Service personnel are researching collection records of deceased botanists, who originally located the plant on Atka.

D. *The inadequacy of existing regulatory mechanisms.* The State of Alaska does not have specific legislation or regulations to protect endangered or threatened plant species, although a list of rare State plants exists. All plants occurring on NWRs are protected from collecting (50 CFR 27.51); therefore, *P. aleuticum* occurring within the Alaska Maritime NWR is protected by this prohibition, to the extent it is enforceable. The Act would enhance existing protection through section 7 (interagency cooperation), and Section 9, which further prohibits removal from Federal lands and reduction to possession, and restricts interstate commercial activity.

E. *Other natural or manmade factors affecting its continued existence.* The Mt. Reed population is of critically small size and its alpine environment is somewhat unstable due to solifluction (soil movement) and wind erosion (Lipkin 1985). The fern's diminutive size, small gene pool, and localized distribution add to its susceptibility to inadvertent destruction.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to propose this rule. Based on this evaluation, the preferred action is to list *Polystichum aleuticum* as endangered. Endangered status is appropriate due to its extreme rarity and vulnerability to extirpation, and the threat from grazing. Critical habitat is not being determined for reasons discussed in the following section.

#### Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary designate any habitat of a species which is considered to be critical habitat at the time the species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for this species at this time. The Adak population of *Polystichum aleuticum* is sufficiently restricted that unauthorized collecting or vandalism could significantly affect its survival. Publication of critical habitat descriptions and maps in the Federal Register would increase the likelihood of such activities. The population of *P. aleuticum* on Adak is located on a National Wildlife Refuge and refuge personnel have been advised of the presence of the fern and possible management needs. Villagers in Atka are aware that the plant was found there. No other public notification benefits would accrue from designating critical habitat. Therefore, there is no net benefit in designation of critical habitat for this species.

#### Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages additional survey work and conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition (should *P.*

*aleuticum* occur on private land on Atka) and cooperation with the State of Alaska. The Act also requires that recovery activities be carried out for all listed species. Such actions can be initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against taking are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402. Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or to result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. Both Adak and Atka Islands are within the Aleutian Islands Unit of the Alaska Maritime NWR. However, certain lands on Atka have been selected and conveyed to the Atxam Native Corporation under the Alaska Native Claims Settlement Act of 1971. The northern half of Adak Island (including Mt. Reed), though still within the Refuge, is a U.S. Naval Reservation within which the Navy has development rights that can be exercised if compatible with Refuge resources. Immediate measures to protect *P. aleuticum* may entail intensive surveys to define current range, fencing to exclude introduced ungulates, and cultivation to ensure survival and to allow for reintroduction back into its historical habitats.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62 and 17.63 set forth a series of general trade prohibitions and exceptions that apply to all endangered plant species. All trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61, would apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export an endangered plant, transport it in interstate or foreign commerce in the

course of a commercial activity, sell or offer it for sale in interstate or foreign commerce, or remove it from areas under Federal jurisdiction and reduce to possession. Certain exceptions can apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered species under certain circumstances. It is anticipated that few trade permits will ever be sought or issued since the species is quite small in size and is not common in cultivation or in the wild. Requests for copies of the regulations on plants and inquiries regarding them may be addressed to the Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, DC 20240 (703/235-1903).

#### Public Comments Solicited

The Service intends that any final action resulting from this proposal will be accurate and as effective as possible. Therefore, any comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning any aspect of this proposal are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to *Polystichum aleuticum*;

(2) The location of any additional populations of this species and the reasons why any habitat should or should not be determined to be critical habitat as provided by Section 4 of the Act;

(3) Additional information concerning the range and distribution of this species; and

(4) Current or planned activities in the subject area and their possible impacts on this species.

Final promulgation of the regulation on *Polystichum aleuticum* will take into consideration the comments and any additional information received by the Service, and such communications may lead to adoption of a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be filed within 45 days of the date of the proposal. Such requests must be made in writing and addressed to the Regional Director, U.S. Fish and Wildlife Service, 1011 East Tudor Road, Anchorage, Alaska 99503 (907/786-3435).

**National Environmental Policy Act**

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined by the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the *Federal Register* on October 25, 1983 (48 FR 49244).

**Literature Cited**

- Christensen, C. 1938. On *Polystichum aleuticum* C. Chr., a new North American species. *American Fern Journal* 28:111-112.
- Friedman, B.F. 1984. Pp. 3.4-4.328 in Feasibility study data collection program for the proposed hydroelectric project at Atka, Alaska. Northern Technical Services, Inc. and Van Gulik and Associates, Inc. Final report prepared for Alaska Power Authority.
- Hulten, E. 1936. New or notable species from Alaska. Contributions to the flora of Alaska I. *Svensk Botanisk Tidskrift* 30:515-528.

Lipkin, R. 1985. Status report on *Polystichum aleuticum* C. Chr. Status report submitted to the U.S. Fish and Wildlife Service, Anchorage, Alaska. 21 pp. and appendices.

Murray, D.F. 1980. Threatened and Endangered Plants of Alaska. U.S. Forest Service and Bureau of Land Management. Fairbanks, Alaska. 59 pp.

Smith, D. 1985. *Polystichum aleuticum* from Adak Island, Alaska, a second locality for the species. *American Fern Journal* vol. 75, no. 2.

Talbot, S. 1986. A search for *Polystichum aleuticum* (Polypodiaceae) on Adak Island, Alaska: Status report supplement, U.S. Fish and Wildlife Service. Anchorage, Alaska. 21 pp.

Wagner, D. 1979. Systematics of *Polystichum* in western North America north of Mexico. *Pteridologia* 1:1-64.

**Author**

The primary author of this proposed rule is Mr. Michael Amaral, Endangered Species Division, U.S. Fish and Wildlife Service, 1011 East Tudor Road, Anchorage, Alaska 99503 (907/786-3435).

**List of Subjects in 50 CFR Part 17**

Endangered and threatened wildlife, Fish, Marine mammals, Plants (agriculture).

**Proposed Regulation Promulgation****PART 17—[AMENDED]**

Accordingly, it is hereby proposed to amend Part 17, Subchapter B of Chapter I, Title 50 of the Code of Federal Regulations, as set forth below:

1. The authority citation for Part 17 continues to read as follows:

Authority: Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*).

2. It is proposed to amend § 17.12(h) by adding the following entries in alphabetical order to the List of Endangered and Threatened Plants:

**§ 17.12 Endangered and threatened plants.**

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(h) \* \* \*

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Polypodiaceae—Fern family:						
<i>Polystichum aleuticum</i>	Aleutian Shield-fern	U.S.A. (AK)	E		NA	NA

Dated: March 24, 1987.

Susan Recca,

Acting Assistant Secretary for Fish and Wildlife and Parks.

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